

## CLAIMS

1 1. A high-speed wireless data packet network, comprising:  
2 an application server for transmitting data to a  
3 mobile terminal; and  
4 a gateway device providing an interface between the  
5 application server and network elements of the high speed  
6 wireless data packet network wherein a GGSN is formed to  
7 pass network performance parameters to the application  
8 server while a data session is being established to enable  
9 the application server to determine an appropriate QoS  
10 level of data transfer.

1 2. The high speed wireless data packet network of claim 1  
2 wherein the network performance parameters include QoS ratings.

1 3. The high speed wireless data packet network of claim 1  
2 wherein the network performance parameters include an indication  
3 of transfer delays being experienced in the network.

1 4. The high speed wireless data packet network of claim 1  
2 wherein the network performance parameters include an indication  
3 of signal data unit error rates being experienced in the  
4 network.

1           5.    The high speed wireless data packet network of claim 1  
2 wherein the network performance parameters include an indication  
3 of bit error ratios being experienced in the network.

1           6.    The high speed wireless data packet network of claim 1  
2 wherein the network performance parameters include an indication  
3 of the amount of jitter being experienced in the network.

1           7.    The high speed wireless data packet network of claim 1  
2 wherein the network performance parameters include an indication  
3 of traffic congestion being experienced in the network.

1           8.    The high speed wireless data packet network of claim 1  
2    wherein the network performance parameters include an indication  
3    of signal latency being experienced in the network.

1           9.    The high speed wireless data packet network of claim 1  
2    wherein a RADIUS protocol is used between the GGSN and the  
3    application server.

1           10.   The wireless data network of claim 9 wherein the  
2    network performance indications are appended on defined RADIUS  
3    protocol message extensions.

1           11.   The wireless data network of claim 10 wherein the  
2    defined RADIUS protocol message extensions are vendor specific.

1 12. A gateway GPRS support node (GGSN), comprising:  
2 a processor;  
3 a memory coupled to communicate with the processor,  
4 the memory comprising computer instructions that define  
5 logic to prompt the GGSN to transmit network performance  
6 indicators to at least one external application server  
7 during session setup procedures.

1 13. The GGSN of claim 12 wherein the computer instructions  
2 define logic to prompt the GGSN to generate QoS information to  
3 the external application server.

1 14. The GGSN of claim 12 wherein the computer instructions  
2 define logic to prompt the GGSN to transmit the network  
3 performance indicators utilizing a RADIUS protocol wherein the  
4 network performance indicators are appended to known RADIUS  
5 signals.

1        15. A method of transmitting data in a high speed wireless  
2 data packet network, comprising:  
3        determining network performance characteristics; and  
4        transmitting a network performance indicator to an external  
5 application server while a data session is being set up.

1        16. The method of claim 15 further including the step of  
2 transmitting network performance indicators only to a select  
3 group of application servers.

1        17. The method of claim 15 further including sending the  
2 performance indicator periodically if the server is one of a  
3 gaming application type server, a multimedia application type  
4 server, a streaming media type server, an interactive  
5 application type server or a real-time type data server.

1        18. The method of claim 15 wherein the network performance  
2 indicator is a required QoS rating.

1        19. The method of claim 18 wherein the required QoS rating  
2 is increased or decreased according to whether a terminal  
3 receiving the data from the application server desired to  
4 increase or decrease signal quality.

1        20. The method of claim 18 wherein the network performance  
2 indicator is transmitted to enable the application server to  
3 evaluate the required QoS to a QoS specified in a service level  
4 agreement as a part of determining what QoS should be provided.